

치어 및 어린 일본송사리에서 TCDD와 PCB 126의 생체축적 및
배설에 관한 연구

Bioconcentration and Elimination of 2,3,7,8-tetrachlorodibenzo-*p*-dioxin(TCDD)
and 3,3',4,4',5-pentachlorobiphenyl(PCB 126) in fry and juvenile
Japanese medaka(*Oryzias latipes*)

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Studies were carried out to compare the bioconcentrations of TCDD and PCB 126 in different sizes of Japanese medaka, and to examine the whole body elimination kinetics of TCDD and PCB 126 in juvenile Japanese medaka. For bioconcentration studies, different sizes of fry and juvenile medaka were exposed statically to varying doses of waterborne TCDD and PCB 126 for 96 hours. The 96-h bioconcentration factors and their lipid normalized values for TCDD and PCB 126 were similar, and decreased with increasing body size. The average total lipid content(%) in the fry, juvenile, and adult Japanese medaka were 5.7, 4.2, and 4.6, respectively. For elimination studies, the juvenile medaka were exposed statically to different doses of waterborne TCDD and PCB 126 for 96 hours, and then depurated for 42 days in a flow through system. The elimination phases followed first-order kinetics and fit a two-compartmental model better than a one-compartmental model. The coefficients of determination(r^2) for TCDD/PCB 126 in one-compartmental model analyses and two-compartmental model analyses were 0.919/0.921 and 0.991/0.992, respectively. The calculated whole body elimination half-life($t_{1/2}$) values for TCDD and PCB 126 using a two compartmental model were 27.2 days and 32.3 days, respectively. The $t_{1/2}$ value for PCB 126 was higher than that of TCDD even though they have similar octanol/water partition coefficient(K_{ow}) values.

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